

SEGMENTED FISHING ROD WITH FERRULE JOINING ROD SECTIONS

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BACKGROUND

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Field of the Invention

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This invention relates to fishing rods, and more particularly to ferrules joining sections of a segmented fishing rod.

Prior Art

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It is known to have ferrules joining sections of segmented fishing rods; that is, rods typically are made of a plurality of rod sections joined together by ferrules.

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During nonuse, the rod sections are separated for convenience in storage and transport. Thus, the ferrule facilitates the removable joinder of rod sections.

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Ferrules commonly comprise two parts, a first part affixed to a rod first section and a second part affixed to a rod second section, engaging in a matching interface to join the rod first and second sections. Ferrule parts must be carefully aligned as they are bonded to rod section ends so the sections are subsequently aligned when they are connected. Typically, matching male and female parts join in a friction fit, each bonded to a rod section. Friction fit ferrules require close tolerance manufacturing, which close tolerance deteriorates over time and becomes ineffective and is damaged when sand and the like dirty the matching surfaces. The ferrule parts are commonly slipped over the sections ends and bonded. The section ends usually are turned down to make them smooth and fit a ferrule opening in which they are received. This weakens the rod, which becomes a failure point, a point at which the rod will often break. This configuration of one ferrule part mating within the other results in two

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layers of ferrule material. Even when the ferrule material is flexible, the double layer
2 exacerbates the added stiffness imposed by the ferrule on the rod.

An object of the present invention is to circumvent the need for close tolerance
4 manufacturing of the mating ferrule surfaces. Another is to obviate the need to
maintain clear ferrule surfaces. A still further object is to reduce stiffness added to a
6 rod by the ferrule. Another object is to eliminate the need to turn down rod section
ends and the consequent failure points it introduces in a rod. Another object is to
8 minimize the need to align the ferrule with both rod sections.

SUMMARY

10 These objects are achieved in a one-piece tubular ferrule affixed to a first rod
section end with a first rod section end fitting into a tubular opening coaxial with the
12 rod section. Typically, the first rod section is bonded to the ferrule with adhesive. A
wrap such as a thread may also tighten the ferrule around the first rod section end.

14 A second ferrule tubular opening coaxial with the first opening removably
receives a second rod section end therein. The second ferrule tubular opening is
16 uniformly lined with a pliant, mildly adhesive liner secured to the opening inner wall.
The liner then engages the second rod section end in retaining it in the ferrule until
18 withdrawn under pulling force of removal. The second rod section end typically is
prepared with a thread wrap around its circumference to provide a nonsmooth surface
20 that provides an improved engaging surface for the mildly adhesive liner to grasp.
Yet, while the liner cooperates with the tubular opening to maintain the second rod
22 section in alignment with the first rod section, it is also conducive to facile removal of
the rod section from the ferrule. Sand or other grit is also tolerated, being absorbed

into the shape of the threaded second section end as the pliant liner conforms around
the section end.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side cut-away view of the ferrule of the present invention shown to
affixed between a rod first section end and a rod second section inserted into a pliant
ferrule liner.

FIG. 2 is a side cut-away view of the ferrule mounted on the rod first section
end in alignment with a rod second section end with thread wraps around slits.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A segmented fishing rod 100 comprises a number of sections 102 joined at
first and second section ends 104 and 106. A single-piece ferrule 10 is employed to
detachably join fishing rod section ends 104 and 106 with the ferrule affixed to first
rod section end 104 coaxially with the first rod section end 104 fitting in the ferrule
10. Typically, the ferrule has tubular body 12 with a first bore or opening 14 in a
tubular first end 16 into which the first rod section end 104 is received, bonded
therein with adhesive. A thread 18 may wrap around the ferrule tubular first end 16
and tightened to bind it to the rod first section end 104. Ferrule first end 16 may
include longitudinal slits 20 around which thread 18 is tightened, urging the first end
16 tightly around the section end 104.

The ferrule body also has a second bore or opening 22 in a tubular second end
24 coaxial with the first bore or opening 14 into which the second rod section end 106
is releasably received in joining ends 104 and 106 of said first and second fishing rod

sections 102 in axial alignment. A pliant, mildly adhesive liner 25 is secured inside the tubular body second end 106, releasably engaging the fishing rod second section end 106 received therein. The second section end 106 is configured with a nonsmooth outer surface 108 so the pliant liner 25 resiliently conforms to the nonsmooth surface 108 of the end 106 in grasping the second section end in joining the section ends, but yields under force of removing the second section end in separating the sections. Thus, the fishing rod second section 106 is retained in the tubular body second end 24 against inadvertent or unintentional separation by the pliant, mildly adhesive liner 25 until removed under pulling force of a user.

Typically, the nonsmooth surface 108 comprises a line 26 wrapped in a plurality of winds around the second section end. A coating may be applied over the winds for added protection and strength. Alternatively, the nonsmooth surface 108 may comprise at least one annular ridge 28 circumferential around the second section end.

To reduce stiffness in the rod 100, the ferrule body is resiliently flexible with a stiffness approximately equal to the fishing rod sections at their joining ends 104 and 106.

Typically, the cross section of the first and second ferrule openings are circular. In alternative embodiments, the ferrule can be employed to connect rod sections having different cross-sections at their joining ends 104 and 106. This is achieved in the ferrule having first and second openings 14 and 22 of different shapes. Conceivably, tubular opening cross section 30 may comprise a plurality of equal-length lines 32 forming the circumference of the tubular opening, such as in

forming a pentagonal opening 34 or an octagonal opening 36 or a hexagonal opening

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